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SCIENTIFIC PAPERS.

ILLUSTRATED STUDIES IN THE GENUS *OPUNTIA*—IV.

BY DAVID GRIFFITHS.

Among a thousand members of the genus *Opuntia* collected between Ejutla and the Canadian boundary, now in cultivation, the following appear not to have been previously described:

***Opuntia Bentonii*, sp. nov.**

An open-branching, erect species, closely resembling *O. Lindheimeri* in habit; joints distinctly obovate, 17 to 18 by 27 to 28 cm. (last year's growth), thin, with vascular system distinctly traceable for two or three years, dull dark green; areoles elliptical to obovate, 5 to 6 mm. long, tawny when young but soon becoming black; leaves subulate, cuspidate-pointed, recurved, 5 mm. long; spicules yellow, unequal, scattered in upper portion of areole and fringing it or scattered through its entire area; spines not numerous, confined to an irregular distribution on edges of joints, yellow, annular, translucent, bonelike, flattened, erect to recurved, 1 to 4 or 5, longest 2½ cm. long and others shorter; flowers light yellow, large, 9 to 10 cm. in diameter, petals broadly obovate, rounded, mucronate, filaments greenish yellow, pistil 3 cm. long, style greenish white, stigma yellowish green, 7-parted; ovary obovate, slightly tuberculate when young, about 5 cm. long, with sub-circular areoles 2 to 3 mm. in diameter, bearing yellow spicules and a few fugacious, yellow, delicate spines; fruit obovate-pyriform, purplish red throughout, insipid, umbilicus broad, flat, slightly raised to slightly depressed with a slight pit in center.

The species is most closely related to *O. texana*, but differs in shape, thickness and texture of joints, distribution and number of spines, and other minor details. It has turned up frequently during the past six years from Fernandina, Florida, to the mouth of the Brazos, always in cultivation in the eastern portion of this range and native in southwestern Louisiana and Texas. The first collection of it was made at McClenny, Florida, April 26, 1906, by Mr. Harmon Ben-

ton. This collection has been grown by vegetative propagation since. The last planting was made in the spring of 1908, and plants from this setting with single-joint cuttings bloomed profusely the second year and at the end of the fourth season's growth are about four feet high and seven to eight feet in diameter. It is perfectly hardy at San Antonio, Texas, but at the beginning of the fourth growing season showed signs of decay of central joints, indicating a breaking down, more or less common, which precedes in many cases a more rapid decay resulting in the death of the main trunk. This simply is an indication that the species in this situation is not long lived. It is a common phenomenon in many introduced species.

The type specimen is one prepared April 24, 1910, from a cultivated specimen, numbered 8374 D. G., and collected originally by Harmon Benton at McClenny, Florida, April 26, 1906.—Plates 1 and 2.

***Opuntia Gregoriana*, sp. nov.**

An erect, quite compactly branched, grayish green plant, a meter or more high, $1\frac{1}{2}$ meters or more in spread of branch; joints obovate, glaucous, with a tinge of purple about the upper marginal areoles, about 14 by 21 cm. and again 12 by 17 cm. and even smaller than this, uniform in general outline; areoles brown, prominent, but not protruding much, ovate to obovate, about 3 mm. long on sides of joints but sub-circular and often 6 mm. long on edges, even in current year's growth, increasing some in size with age; spicules unequal, scattered through entire areole but more numerous above, variable, the longest about 6 mm., not increasing much after first year, often becoming 1 cm. long at tip of joint, yellow, but sometimes brownish tinged; spines not numerous, confined to edges and upper areoles of joints, 1 to 3 and at times as high as 6, yellowish or bleached, white distally with translucent tips and tinted bases, flattened, sometimes twisted, not annular or at most only very faintly so, commonly 3 cm. long but ranging from 1 to 4 cm.; flowers yellow; fruit deep purplish red all the way through, obovate to pyriform, slightly pitted at apex with sub-circular, tawny, remote areoles bearing a tuft of unequal, centrally-located spicules 3 or 4 mm. long, about 4 by 7 cm.

The species should probably be classed with *O. Engelmannii*, but the joints are very distinct in outline and the spines are few in number for this group.

The type was prepared at Chico, California, September 9, 1911, from cultivated specimens collected near El Paso, Texas, July 29, 1905. Both the type specimen and the original collection bear my serial number 8020. Two generations of this have been grown by vegetative propagation since its collection.—Plate 3.

***Opuntia incarnadilla*, sp. nov.**

An erect, compactly-branched, arborescent species with a distinct cylindrical trunk 20 to 30 cm. in diameter, 2 to 3 or 4 meters or more high; joints of a striking blue-green with some bloom in the fall but much brighter in color in the spring, uniformly and regularly obovate, about $15\frac{1}{2}$ by $28\frac{1}{2}$ cm., smooth, flat, broadly rounded above and tapering uniformly below; areoles oval to obovate, 2 to 4 mm. long, enlarging in age to about 6 mm. in diameter, the lower usually unarmed and about 2 cm. apart; wool brown turning gray to dirty black; spicules yellow, very inconspicuous even on old joints when they are slightly darkened, scarcely visible up to 18 months old; spines white with translucent bonelike tips, short, stout, erect or when young bonelike throughout, bent, twisted, flattened, erect or recurved, irregularly distributed, commonly none below, 1 to 2 above and 2 to 4 on edges of the joints, with an occasional joint with entire side armed with 1 to 4, seldom 2 cm. long and from that down to 8 mm., increasing with age on old stems both in length and numbers; fruit bright deep red all through, palatable, oval to subglobose with comparatively large areoles filled with prominent brown wool, a few inconspicuous spicules in the center and 5 or 6 fugacious, delicate spines below which are commonly 6 to 8 mm. long.

The species is characterized by its beautiful blue-green color, uniformity of joint outline, and habit especially. It should be placed with the *mansa* or large cultivated Mexican species. In California it has made a growth of four feet high by about the same measurement in spread of branch, in four years, and produced a few fruits the third season and a small crop the fourth. At Brownsville, Texas, it is perfectly hardy but does not grow as well, and has not yet produced any fruit, although the plants are the same age as those at Chico, California. The spicules are much more numerous at Brownsville.

The type specimen bears my serial number 8074 and was prepared from cultivated specimens at Chico, California, Sep-

tember 11, 1911. The cuttings from which these plants were grown were collected by myself under the same number at Hepasote, Mexico, August 21, 1905. The description is a compilation of several sets of notes on the cultivated plants.—Plates 4 and 5.

***Opuntia vexans*, sp. nov.**

An arborescent, cylindrical-jointed species with the habit of *O. arborescens* and about equal to that species in stature, reaching in rare instances a height of 3 meters and having a spread of about the same diameter; joints cylindrical, usually more or less curved, somewhat clavate when young on account of the gradual narrowing toward the base, varying in length from 10 to 40 cm., and 2 to 3 cm. in diameter, tuberculate, the tubercles about 5 mm. high and normally 3 cm. long, the upper crest abrupt and less than one-third the entire length, the highest point being at the upper extremity of the areole, the lower slope twice as long or longer and gradual; areoles oval, gray, acutely angled above, 6 to 7 mm. long, enlarging by formation of new structures above, and becoming sub-circular or obovate and 6 mm. or more in diameter, forming mostly a flat cushion 1 to 2 mm. high, at 2 or 3 years of age; spicules yellow, in a small triangular tuft less than 1 mm. long in upper part of areole, not increasing in age; leaves long, cylindrical, subulate, cuspidate-pointed, 1.5 cm. long, usually tinged at tip; spines reddish-brown, with rather close, gray to silvery sheaths, variable, 4 to 10 on current year's joints, increasing to 30 or more in age, erect, diverging in all directions, commonly 4 to 10 mm. long; flowers delicate light purple, $5\frac{1}{2}$ to 7 cm. in diameter when fully opened, inner row of petals 8, obovate-spatulate, rounded to retuse and minutely cuspidate above, filaments greenish purple, more deeply colored distally, style purple, fading below to almost white, stigma white, 7 to 8-parted; fruit dry, obovate, tubercled at first, becoming less so in age but never smooth, greenish yellow when ripe, drying upon the plant and then falling off, obovate, 22×35 mm. or subglobose and 22×25 mm., armed with the usual bunch of spicules, and 1 to 3 or 4 delicate, fugacious, hairlike spines sheathed at their tips only.

The species belongs to the *O. arborescens* group and is commonly confused with that species, from which it differs in the character of its fruits and tubercles especially, and agrees with it in form and grosser aspects. It is one of the best ornamental species of the group and is readily propagated from cuttings and less so from seed. At Chico, California, it makes two crops of fruit usually, and at San An-

tonio, Texas, either two or three under good cultivation and favorable season. In October, 1911, there were upon our plants in Texas the first crop of dry fruits, the second crop of green fruits with embryos well hardened, and a crop of blossoms. This species appears to be about as prolific in its fruit production in Texas as in California, which is not true of many species. Like many other species of *Opuntia*, this one secretes honey in the axils of its leaves, and in such dry climates as California, where there is no rain during the growing season, globules of honey which finally dry to a brittle, clear pellet of sugar attached to the upper portion of the areole, are conspicuous. Wasps are frequently attracted by this secretion, but the writer has never seen honey bees gathering it.

The plants at San Antonio were set in 1908. At the close of the fourth season they are five to six feet high and have a spread of fully six feet. The species has been grown and studied under four collection numbers. The type specimen is one bearing my serial number 9174, prepared at San Antonio, Texas, May 2, 1910, from plants cultivated from cuttings collected under the same number in Webb County, Texas, March 13, 1908. Native plants have not been seen elsewhere, but the species is frequently cultivated. The description is a compilation of several sets of notes taken from native and cultivated plants.—Plate 6 and plate 7, two right-hand rows.

***Opuntia demissa*, sp. nov.**

A low prostrate or half ascending species, with main branches on edge on ground and others ascending from them, or often no more than 2 joints high; joints subcircular to obovate or oval, often 18×28 but often only 15 cm. in diameter, yellowish green with often a touch of bloom, tubercled and coppered when young, but soon becoming smooth and yellowish green; the young tubercles narrow abruptly, elevated below and articulated with a very large slightly flattened subulate leaf about 4×12 mm.; areoles subcircular to obovate, very variable in size, often 6 or 7 mm. in diam., but commonly 3 or 4×5 mm., tawny changing through dirty gray to black; spicules yellow, variable, 5 mm. long on one-year old joints, scattered but more numerous above; spines white varying from bone-like to brownish at base, flattened,

twisted, often curved in various ways, but more often erect-spreading, commonly about 4, the longest often 4 to 5 cm. long, but mostly 2 to 3 cm., not annular; flowers yellow, the outer sepals always tinged with red and often a blush on the outer ribs of inner perianth segments, always red when closed and greenish red in bud, filaments greenish below and lighter above, style red, stigma green, 6-7 parted, ovary broadly obovate to hemispherical; fruit subglobose to obovate, red.

The species of the region have been much studied and are very difficult of segregation. *Opuntia occidentalis* and *O. littoralis* are generally accepted, although possibly not always correctly interpreted. It appears to me that the best treatment of the species of the immediate vicinity will recognize four, one of which is still undescribed and usually referred to *O. occidentalis*. This, of course, does not include the introduced forms, clumps of which may occasionally be found growing as though wild.

Like so many species of the group, this one is exceedingly variable, but only remotely related to the other species of the region. Its difference in habit alone is sufficient to separate it from either *Opuntia occidentalis* or *Opuntia littoralis* with which it grows.

The description is taken in the main from the type, supplemented from previous notes in or near the type locality. The type specimen was collected east of San Diego, California, April 2, 1909, under my collection number 9647. In previous years, several other numbers of the same thing have been collected in the same locality. It extends back some distance from the coast, from Santa Barbara south. Previous collections show a great variability in size of joints and character of spines.—Plate 8.

***Opuntia cyanella*, sp. nov.**

Plant comparatively compactly branched, spreading with main stems on edge on ground or when vigorous often flat, usually more or less hemispherical; joints large, wavy, seldom flat, commonly pointed at both ends to some extent, commonly 32×40 cm., margin more or less irregular on account of the prominent areoles, light blue-glaucous-green, but glossy bright green when young and becoming scurfy brown in age; areoles very large and prominent, somewhat

raised even when one year old and especially so on young growth, rich light to dark velvety brown, becoming dirty brown in age, 4-7 cm. apart, increasing in size with age; spicules yellow, scattered, unequal, 1 cm. in length, at first not numerous but soon becoming very numerous and formidable; spines light yellow, but darker at one year of age, annular, flattened, seldom twisted, divergent, 2.5 cm. long, formidable, 2 to 6, mostly about 4 at one year but becoming longer and slightly more numerous in age; flowers opening at 7 in the morning, fully opened by 8, dark red at first, but changing gradually to deep rich purple on exposure, anthers yellow, filaments slightly purplish tinged above and greenish below, stigma light green, about-10-parted, style white or very slightly tinged; fruit purplish red.

This is a conspicuous species throughout the delta region of the Rio Grande. It is especially conspicuous when in bloom. It occurs mostly just above the salt flats where it grows with the mesquite, *Opuntia gommei*, and *O. alta*. The large, deep, purple flowers and large, more or less wavy, blue-green joints are characteristically conspicuous and serve to distinguish the species. The shape and character of joint, however, vary tremendously with the conditions of vigor of the plant. Under cultivation they are much larger and more wavy and the margin more likely to be irregular. The flowers are difficult to describe. Like so many species of this genus a statement regarding the color is of little value unless the changes which occur in it after exposure are depicted. At first when opening the color is almost brick red with a tinge of orange but deeper colored within. Upon exposure to the sun the purple color develops very rapidly and in an hour the flower is a decided purple. Like all other species the opening of the flowers occurs very regularly at a definite time of day.

The description is drawn in the main from a cultivated specimen in the third season's growth, supplemented by notes upon native plants in the type locality. This description was drawn on the 20th of May, 1911, at Brownsville, Texas, when the plants were blooming for the second time that season. They had produced one crop of flowers and joints and another one-half crop was in bloom from matured current year's growth. This so far as observed does not occur in the

native state. The plants at the time the description was drawn, about the middle of the third season's growth, were four feet high, and had a total spread of eight feet and were hemispherical in outline. The type specimen consists of four sheets, bearing my collection number 9702, two prepared in the type locality, Loma Alta, Texas, May 13, 1909, and the other two consisting of a younger joint and flowers, prepared from a cultivated specimen grown from the type and prepared at Brownsville, Texas, May 18, 1911.—Plates 9, below, and 10.

***Opuntia undulata*, sp. nov.**

Plant tall, large, stout, open branching, with cylindrical trunk, often 30 cm. or more in diameter; joints very large, obovate, broadly rounded above, widest above middle, commonly 35×55 cm., firm, hard, quite fibrous, dished, wavy or flat, glossy light yellowish green at first, but changing through a darker green with a slight touch of glaucous to scurfy brown on old trunks; leaves subcircular in section, subulate, pointed, usually tinged with red at the tip, about 4 mm. long, upon a prominent tubercle and subtending a prominent dark brown areole; areoles subcircular to ellipsoid or obovate, about 3.5×4.5 mm., gray, 5-6 cm. apart; spicules yellow in a short compact tuft in upper part of areole, about 1 mm. long, soon becoming dirty and inconspicuous; spines white, few, short, erect, flattened, straight or twisted, 10 to 15 mm. long, 1 to 3 or 4, mostly one or none; fruit large, $4-5 \times 9-10$ cm., dull red to slightly tinged with orange and pulp streaked with red and orange when rind is removed.

The species is very distinct in general appearance from any other known to me. It should be placed with the large "mansa" spiny forms grown and cultivated all over Mexico rather than with the *ficus-indica* group, although its spines are very few in number. Indeed it is nearly spineless, but not quite so much so as some of the *O. ficus-indica* group.

The peculiarities of the joints, lacking the usual flat surface until old, the few spines, hard, firm, fibrous texture, and large size are its distinguishing characteristics.

The species was secured in cultivation at Aguas Calientes, Mexico, in August, 1905, under my collection number 8101, and has been in cultivation since at three places. Seedlings have also been grown since that time to plants six feet high,

but neither seedlings nor vegetatively propagated plants have borne fruit in this country. In no case have any of the plants even flowered. The type specimen is one prepared from a cultivated plant at Brownsville, Texas, October, 1910, and bearing my collection number 8101.—Plates 11, below, and 12.

***Opuntia perrita*, sp. nov.**

A low, caespitose, erect to ascending plant, about 20 to 30 cm. high and forming bunches 20 to 100 or more cm. in diameter; joints 15 to 20 cm. long and 2.5 to 3 cm. in diameter, cylindrical or often more or less fusiform or clavate, tubercles prominent, with long slope downward and top of crest close to the areole or upper short slope, comparatively narrow, about 3 cm. long, 12 mm. wide and 1 cm. high, having a darker green line almost completely surrounding it; areoles oval, about 4×8 mm. in central portion of joint but smaller above and below, often becoming confluent at apex, gray or tawny, flat, but may be slightly elevated on old joints; spicules light bright brown fading to a dirty yellowish brown on old stems, more prominent below, 1 to 2 mm. long but mostly scarcely visible above; spines long, conspicuous and formidable, light straw colored with loose sheath and spines about same color, 4 to 8, divergent, spreading in all directions, with lower ones more turned back than the others as well as smaller and often only half-sheathed, often 5 cm. long, flattened, including sheath fully 2 mm. in diameter; flowers greenish yellow; fruits yellowish when mature, oval to obovate slightly narrowed above, 3.5 cm. long, bearing a single long straw-colored fugacious delicate spine in upper areoles, about $2\frac{1}{2}$ cm. long, sheathed at tip only, tubercled like the stem.

The species is closely related to *Opuntia tunicata* but is distinguished by its more slender, less spiny stems, and yellow instead of glistening silvery white spines. Like that species, it produces, at times and under certain conditions, a multitude of reproductive joints which are comparatively spineless, or at least do not have any of the long sheathed spines, and are even more easily separable than the terminal spiny ones. It is by these latter that the plant is mainly propagated. Young plants produce smaller and less spiny joints, as a rule, and the spreading is continued by the repeated breaking off of subglobular joints as large as marbles. The two species are found, commonly, growing together, or in more or less sep-

arated areas upon the highland of Mexico, especially in the vicinity of San Luis Potosi, Mexico, where I have studied them at various times for the past six years. In cultivation in Texas, it has been exceedingly difficult to propagate *Opuntia tunicata*, but this one grows readily. Neither has yet flowered under cultivation in Texas.

The description is a compilation of four sets of notes, three taken in the type locality and one from cultivated plants, four of which from two importations are now growing. The type specimen is number 9719 D. G., collected near San Luis Potosi, Mexico, August 10, 1904. The name is one commonly applied to both species in this region, and arises from the fancied resemblance of these plants to small dogs, in attacking the feet of pedestrians.—Plates 13 and 14.

***Opuntia tardospina*, sp. nov.**

A robust, rapid-growing, spreading to half-prostrate species, about one meter or less in height; joints subcircular to broadly ovate or even obovate, often 24×30 cm., but usually smaller although in about same proportion, glaucous when young but brighter more yellowish green later, this year's growth about 1 cm. thick and not increasing much in age; areoles very prominent, obovate to subcircular, about 4×5 mm. when young enlarging with age to about 1 cm. in diameter and elevated 3 or 4 mm. by protrusion of the abundant wool, brown at first but soon turning black or dirty gray, 3 or 4 cm. apart; spicules light brown proximally and yellow distally and remaining this way or fading to yellow throughout, scattered but more numerous above, unequal, often 12 to 15 mm. long, increasing with age, very stout and formidable, diverging in all directions from the hemispherical areole; spines mostly on old wood, only an occasional one 2 to 3 cm. long in an occasional areole on current year's growth, yellow or brown at base only, very faintly if at all annular, not twisted, mostly tightly recurved or simply sloping downward; fruit broadly obovate to pyriform, about 4×5.5 cm., having small subcircular black areoles bearing a small tuft of spicules like the stem, about 15 mm. apart.

The species is very different from any known to me. The spicules are very long, numerous and prominent, sometimes covering the old stems, much like those of *Opuntia chlorotica santarita*. Sometimes the spines become 2 to 4 cm. long, but this is rare. This applies to the plant growing in its natural habitat. When under the more favorable conditions of culti-

vation, the spines are much more numerous than indicated in the description, which was drawn from the type plant. They are, however, tardy in their development, appearing mostly the second year. By the third year, the plant is really very spiny under cultivation.

As stated, the description is mainly from the type plant, but notes have been kept for three years on the species under cultivation.

The type specimen is number 9338 D. G., collected near Lampasas, Texas, July 3, 1908, together with some put up later from material grown from cuttings of the type plants. It inhabits the valley lands and is one of the largest species of the region. Under cultivation at San Antonio, Texas, it has bloomed very sparsely the second year, from single joint cuttings.—Plates 11, above, and 15.

***Opuntia gilvoalba*, sp. nov.**

A low erect to ascending species, about 1 m. high and 1 to 2 m. in diameter, with branches frequently on edge on ground and others erect from them, hemispherical in outline when fully developed; joints obovate, broadly to sharply pointed above and contracted and almost stipitate below, yellowish green, about 18×20 cm., thin; areoles large, prominent, brown, turning to dirty gray, and finally black, obovate becoming subcircular, 8–10 mm. in diameter, and about 5 cm. apart; spicules prominent, scattered, unequal, about 1 cm. long, diverging in all directions; spines yellow, stout, annular, diverging in all directions but mostly sloping downward, flattened, seldom twisted, 2 to 2.5 cm. long, increasing somewhat both in length and numbers. 2 to 6 mostly about 4; flowers yellowish white, large and showy, about 10 cm. in diameter when fully opened, petals narrowly obovate with a prominent cuspidate point, style and filaments white, stigma light green; fruit purplish-red, obovate-pyriform, about 34×60 mm., raised at areoles when young, but this disappearing when fully mature, bearing small subcircular areoles with a tuft of divergent spicules the largest of which may be 1 cm. long, these dropping off early, leaving the areole dirty gray.

The species inhabits the brushy, low elevations in the salt marshes of the delta of the Rio Grande. It is readily recognized by its joint and flower characters. The color of the flowers is a very light yellow, almost white, with possibly a tinge of green. It almost exactly matches that of *Opuntia*

leptocaulis. It has grown with us in cultivation at San Antonio, Texas, since March, 1908. The winter of 1910-11 was rather severe, and as a consequence much of each plant was killed. They, however, bloomed profusely in 1911. It blossomed the second year from single joint cuttings.

The type was collected at La Tule, Texas, March 5, 1908. The type specimen is a sheet consisting of a joint and flower number 9046, put up May 4, 1910, at San Antonio, Texas, from a cultivated plant grown from a cutting of the original collection bearing the same number. The description is a compilation of several sets of notes taken mainly from cultivated plants.—Plates 9, above, 16 and 17.

EXPLANATION OF PLATES.

Plates 1, 2.—*Opuntia Bentonii*, from type plant.

Plate 3.—*Opuntia Gregoriana*, from type plant. Note fallen fruit.

Plates 4, 5.—*Opuntia incarnadilla*, from type plants in cultivation.

Plate 6.—*Opuntia vexans*, from the type in cultivation.

Plate 7.—1, *Opuntia vexans*, two right-hand rows, the first three of the figures representing mature dried fruits. 2, *O. arborescens*, left-hand row, the first of the figures representing a mature dried fruit.

Plate 8.—*Opuntia demissa*, from native type plant.

Plate 9.—1, *Opuntia gilvoalba*, above. 2, *O. cyanella*, below. Both under cultivation.

Plate 10.—*Opuntia cyanella*.

Plate 11.—1, *Opuntia tardospina*, above. 2, *O. undulata*, below. Both under cultivation.

Plate 12.—*Opuntia undulata*.

Plate 13.—*Opuntia perrita*: above, under cultivation; below, spontaneous.

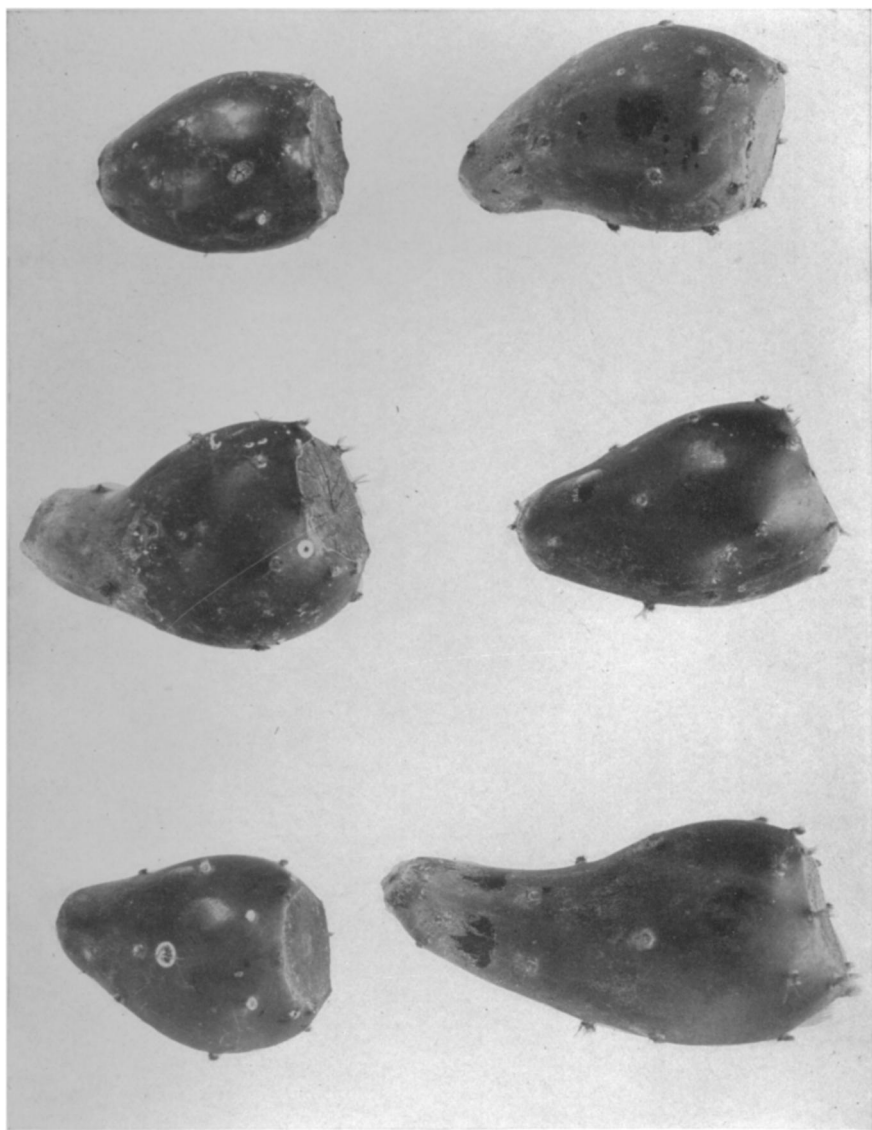
Plate 14.—*Opuntia perrita*.

Plate 15.—*Opuntia tardospina*, from a cultivated plant.

Plates 16, 17.—*Opuntia gilvoalba*.



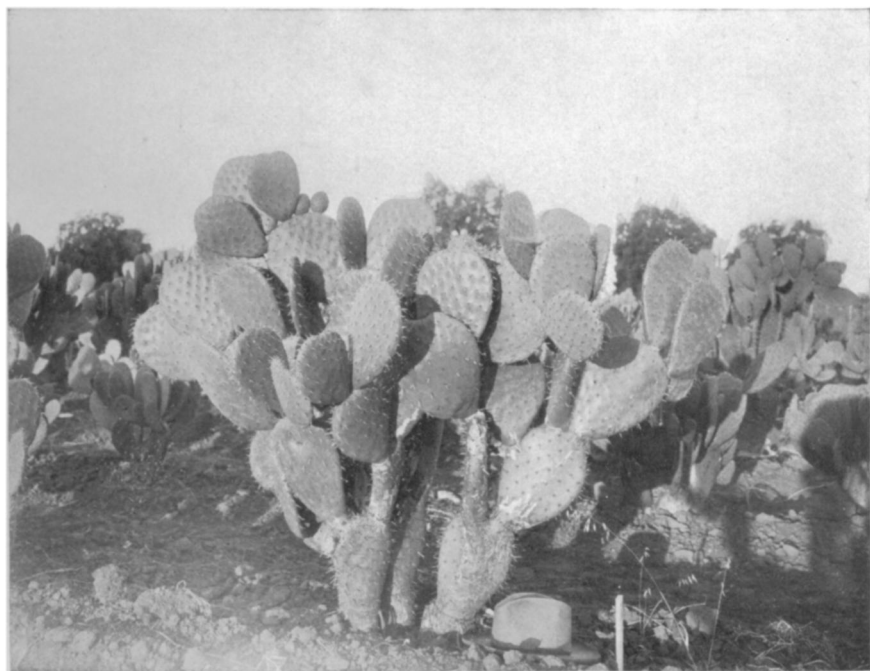
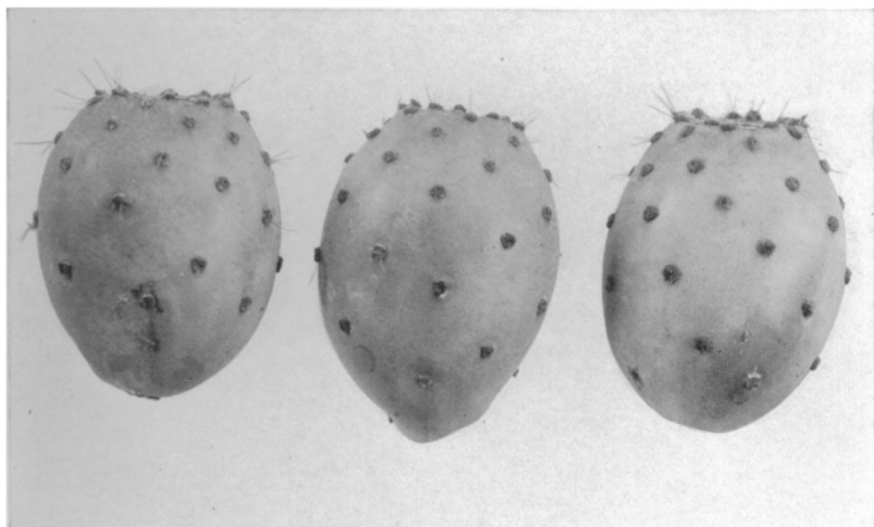
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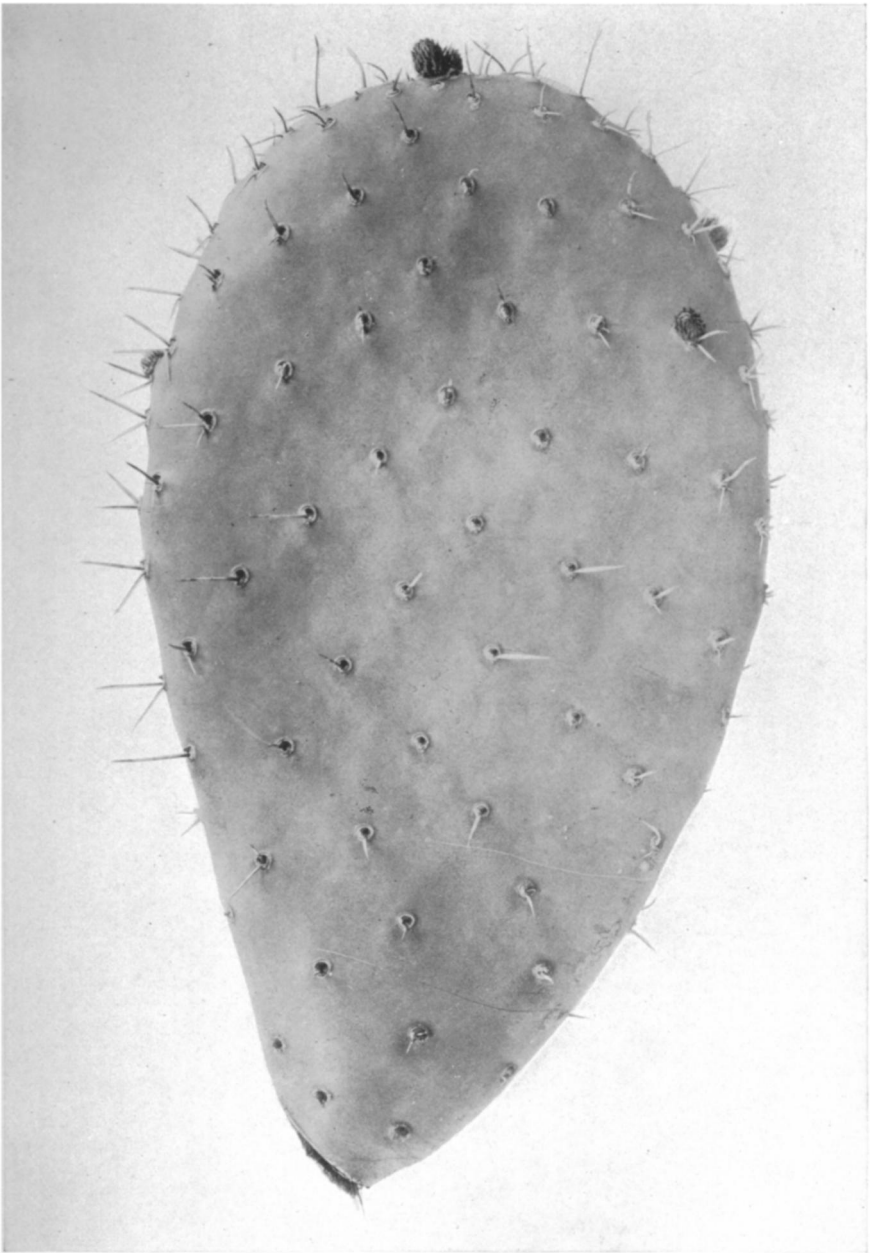
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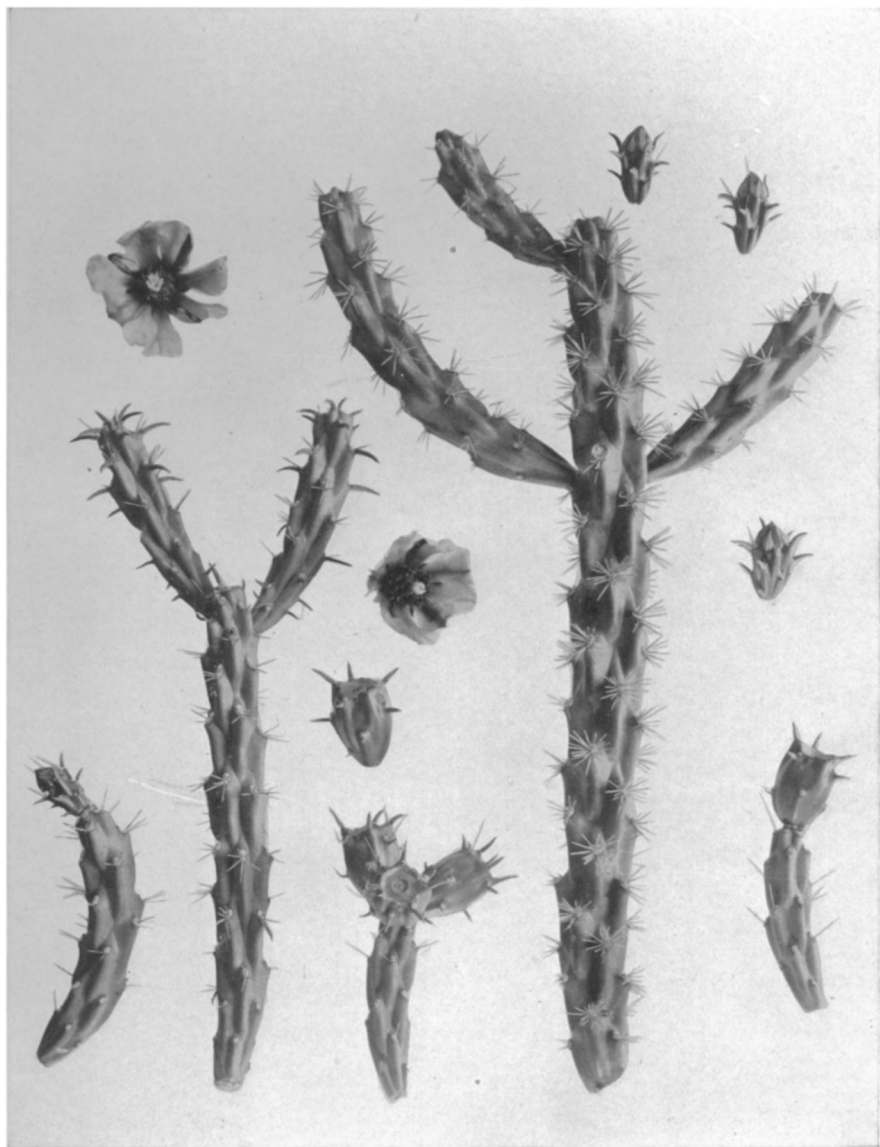
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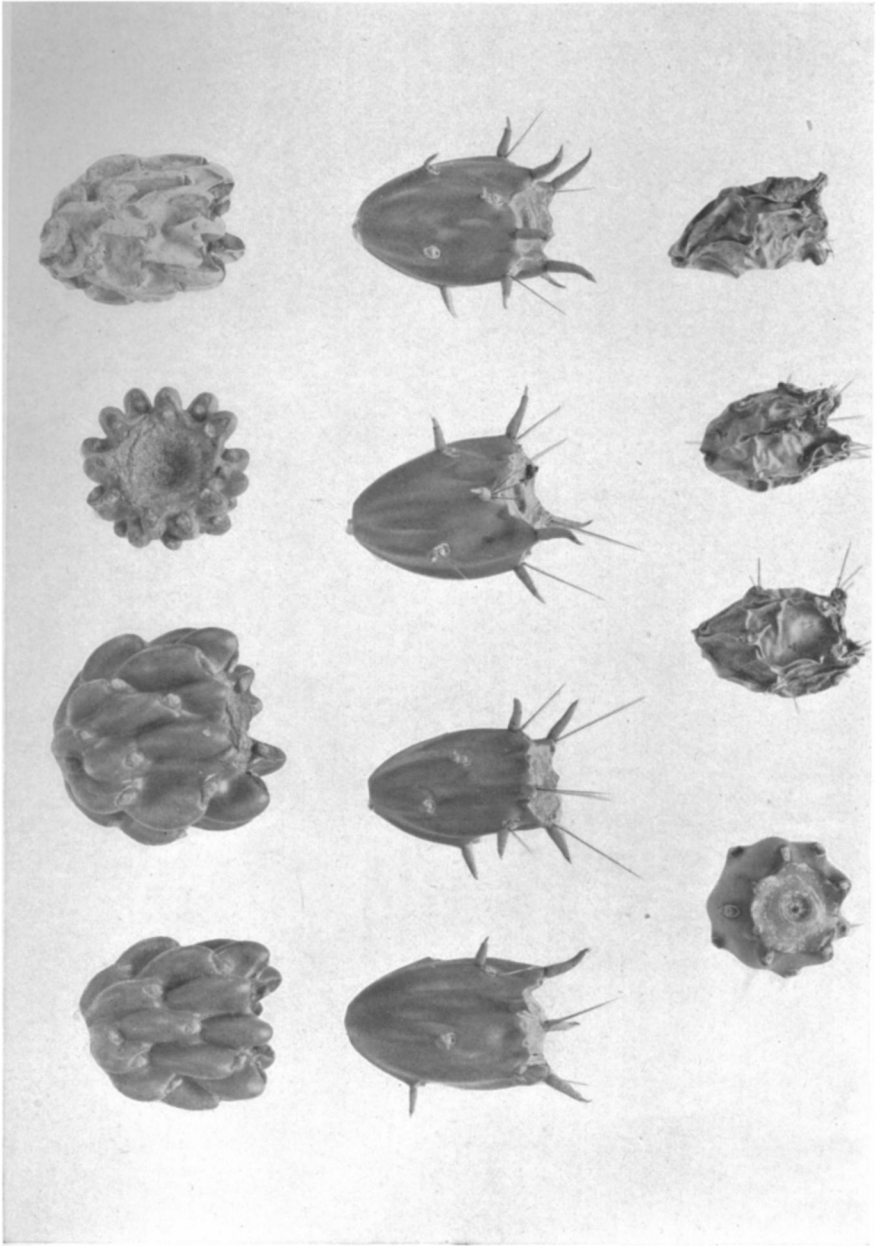
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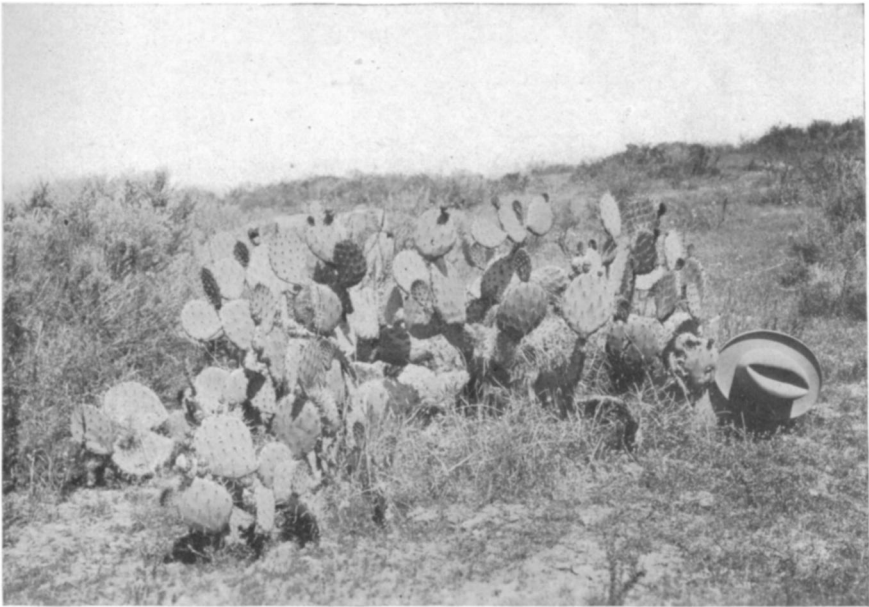
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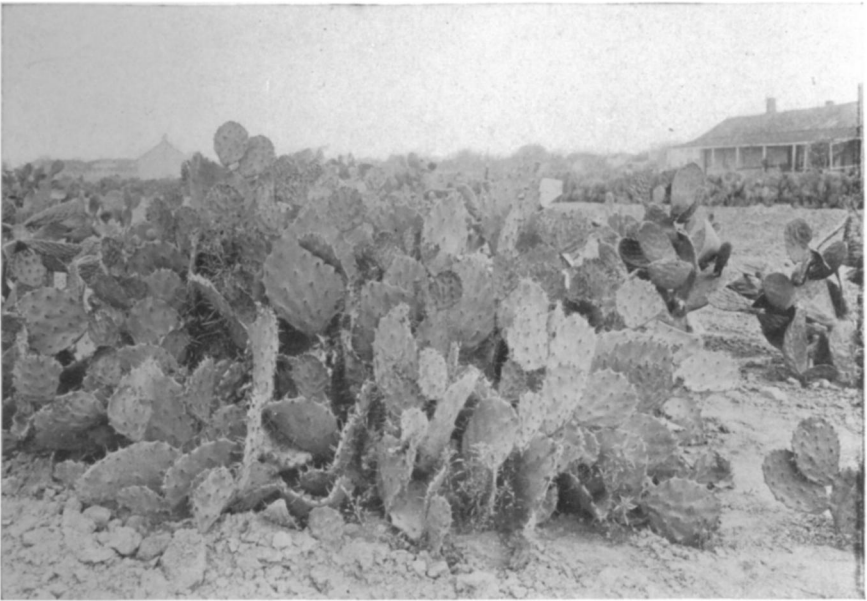
OPUNTIA VEXANS.



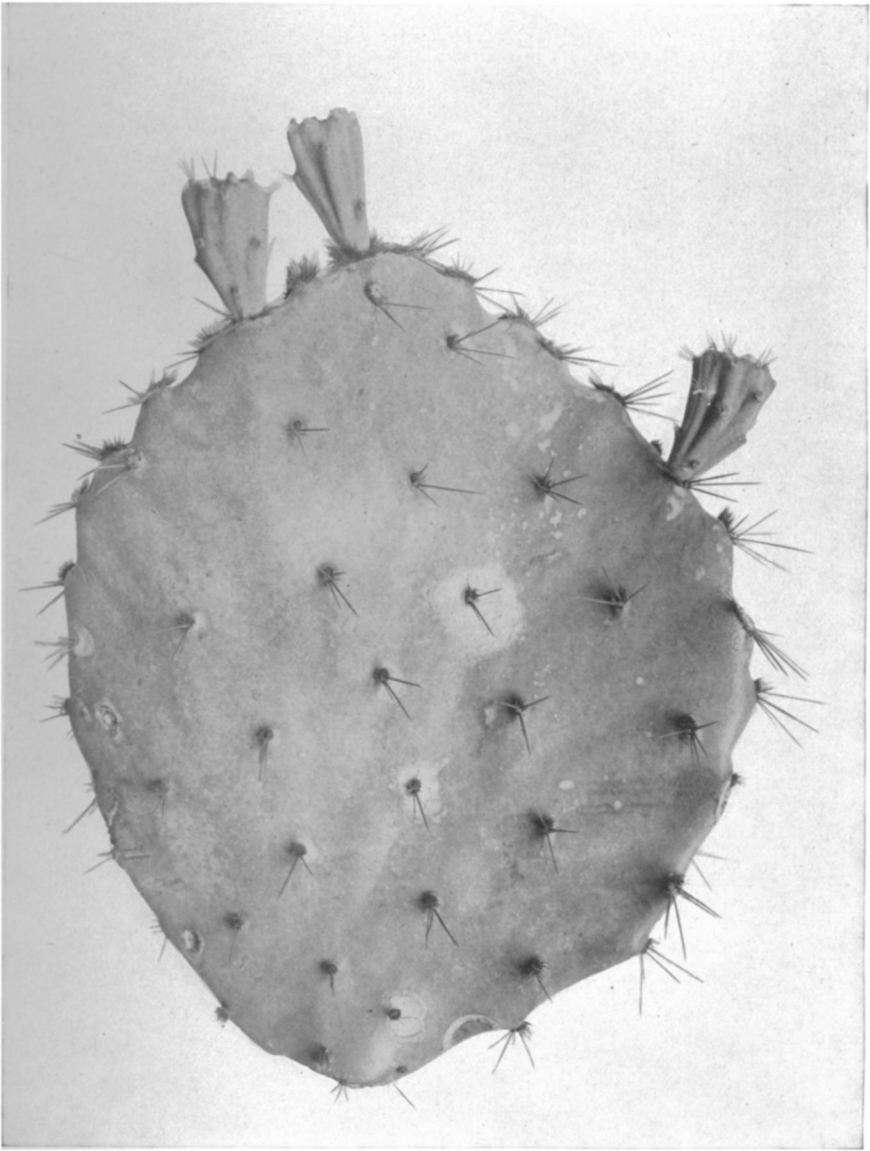
OPUNTIA VEXANS AND O. ARBORESCENS.



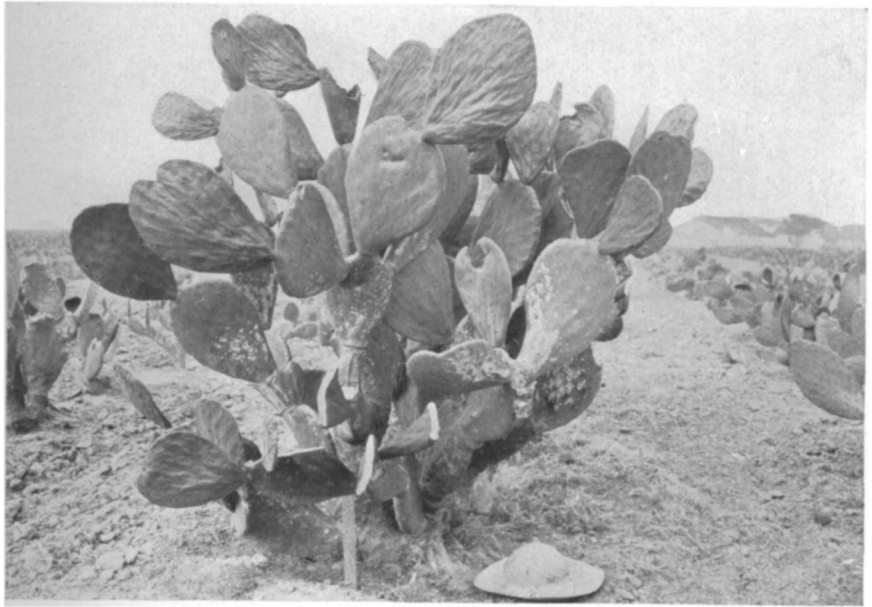
OPUNTIA DEMISSA.



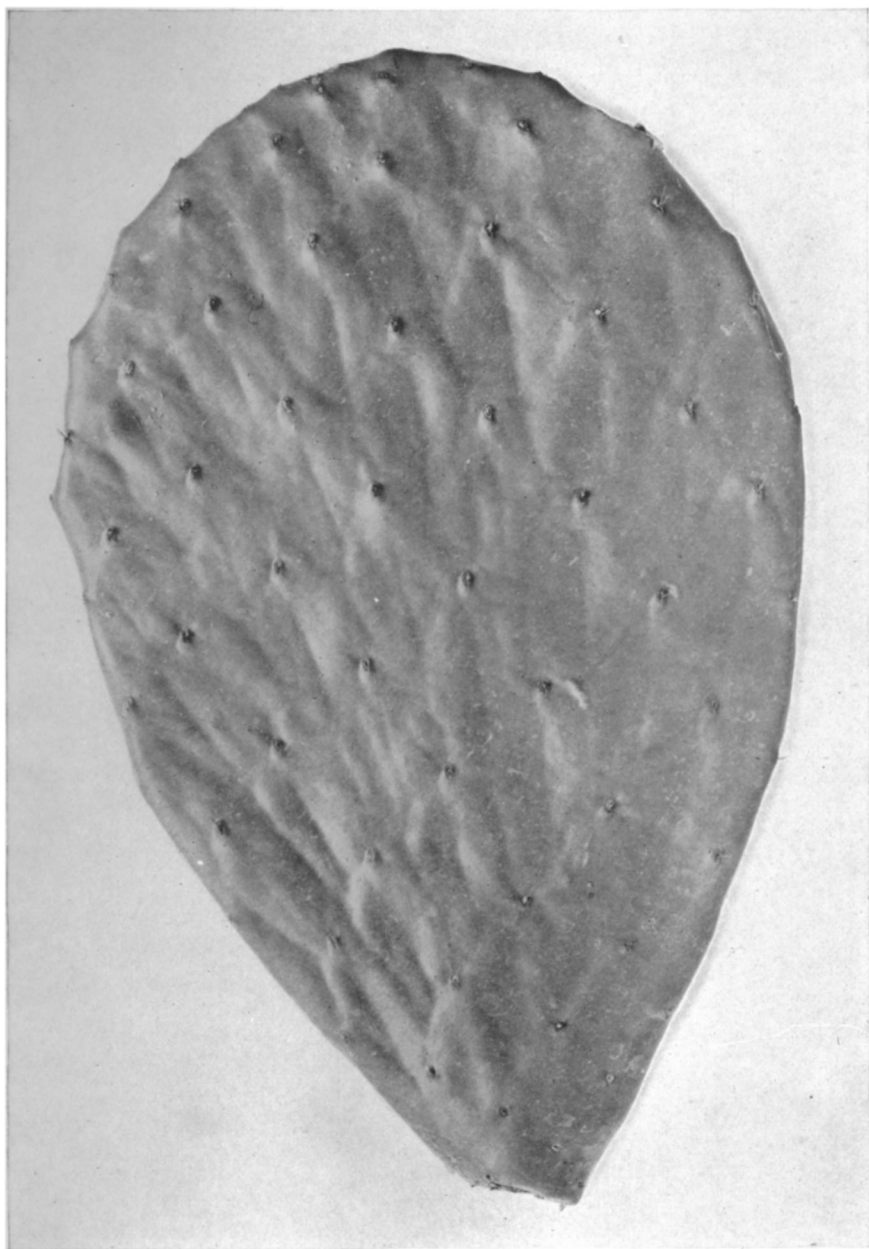
OPUNTIA GILVOALBA AND O. CYANELLE.



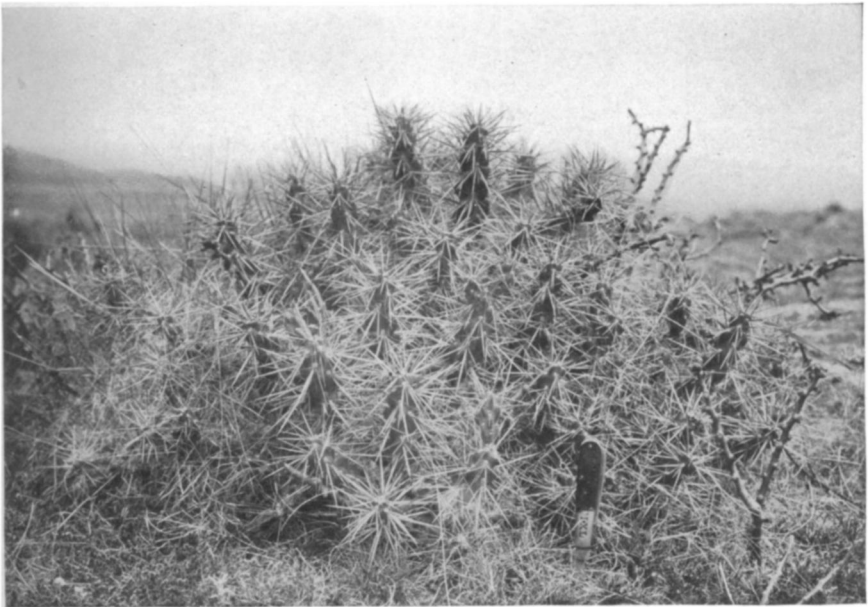
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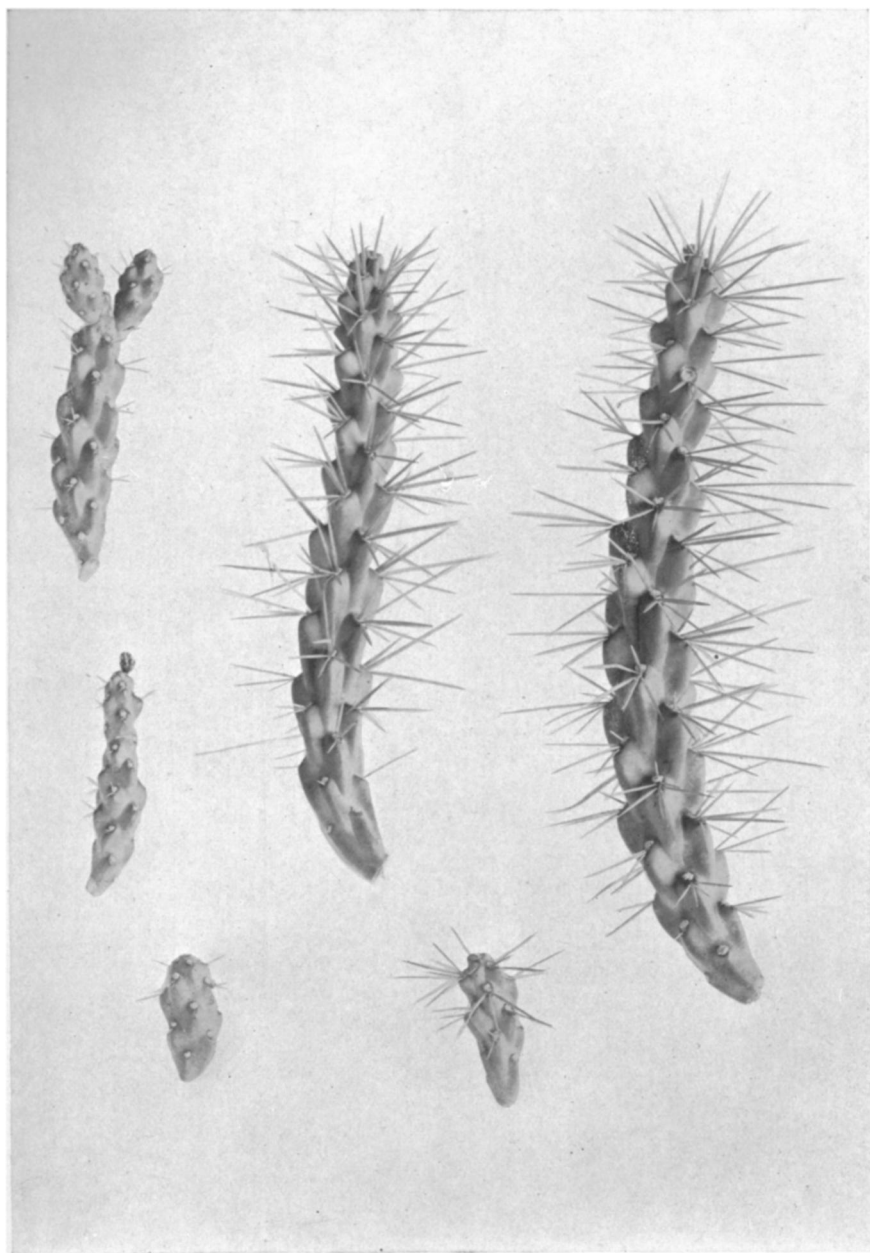
OPUNTIA TARDOSPINA AND O. UNDULATA.



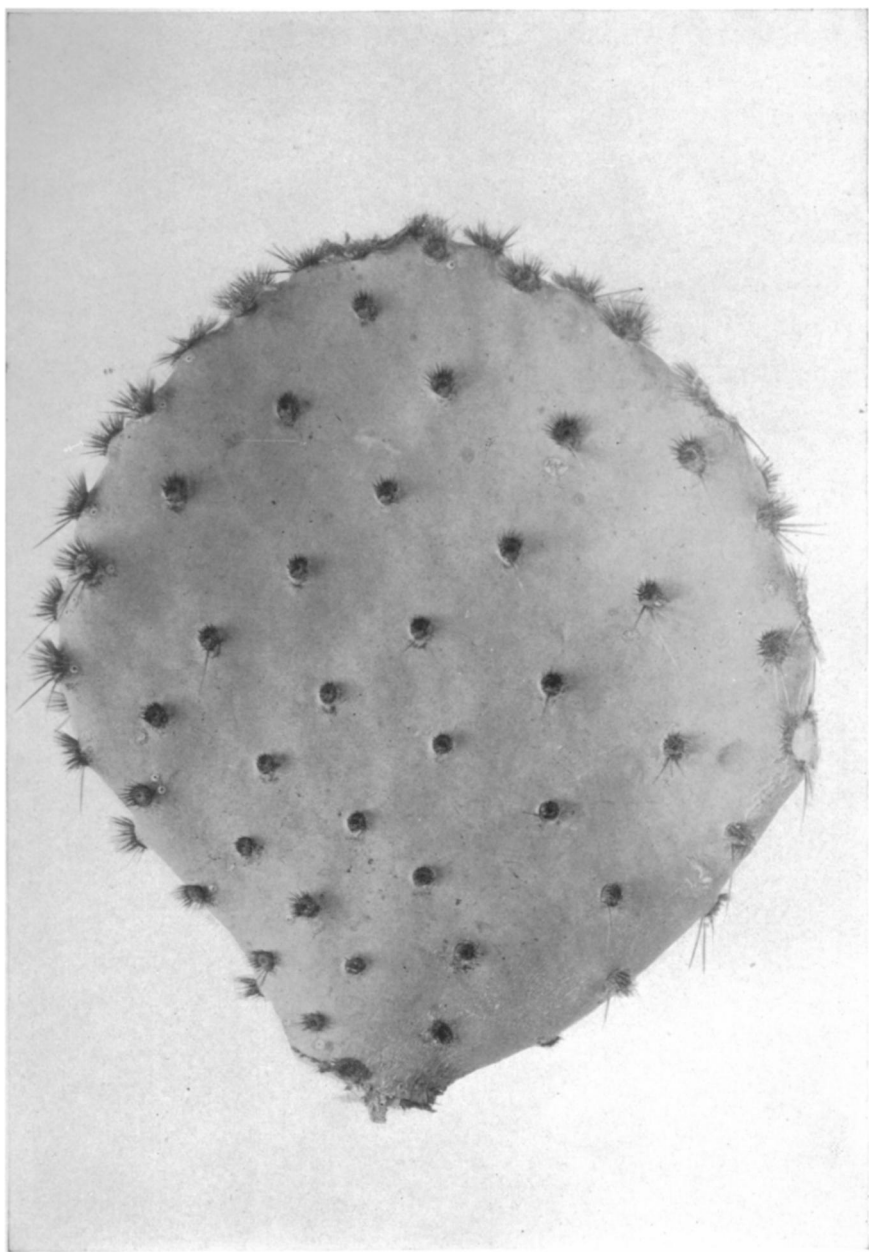
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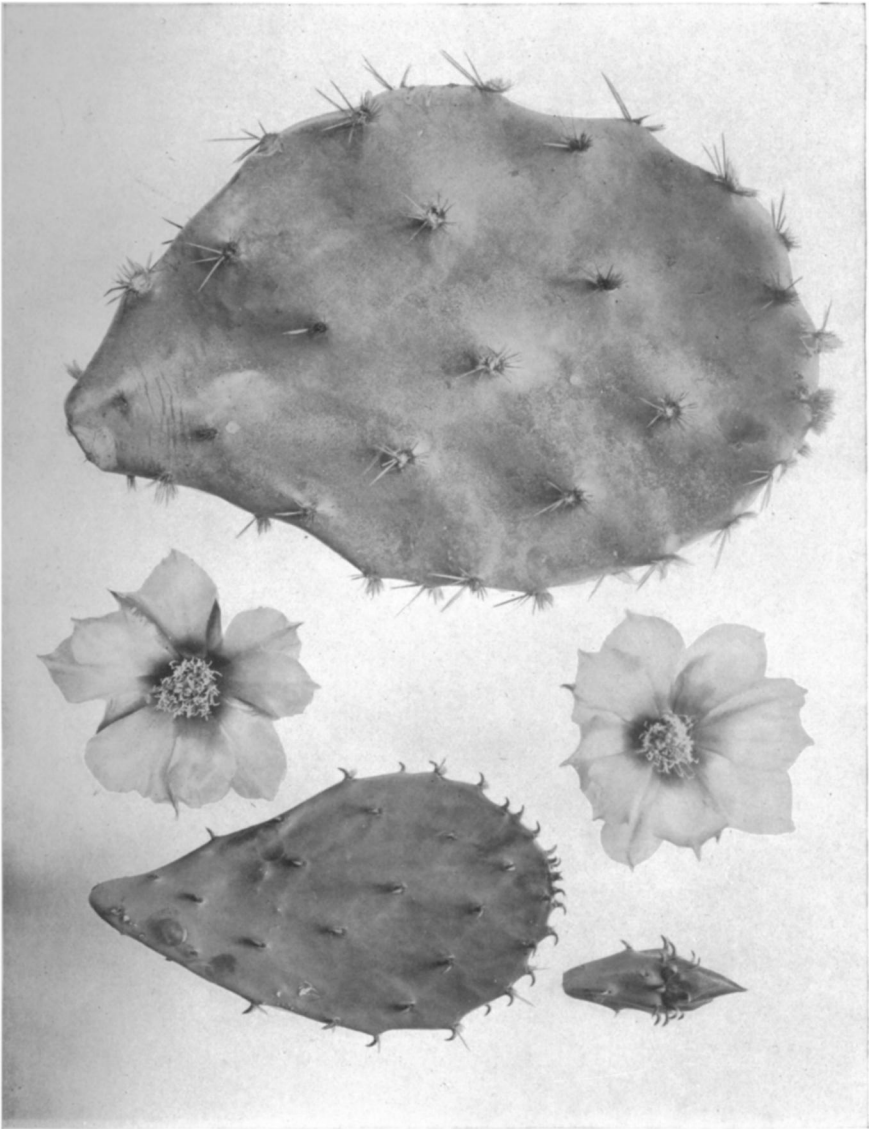
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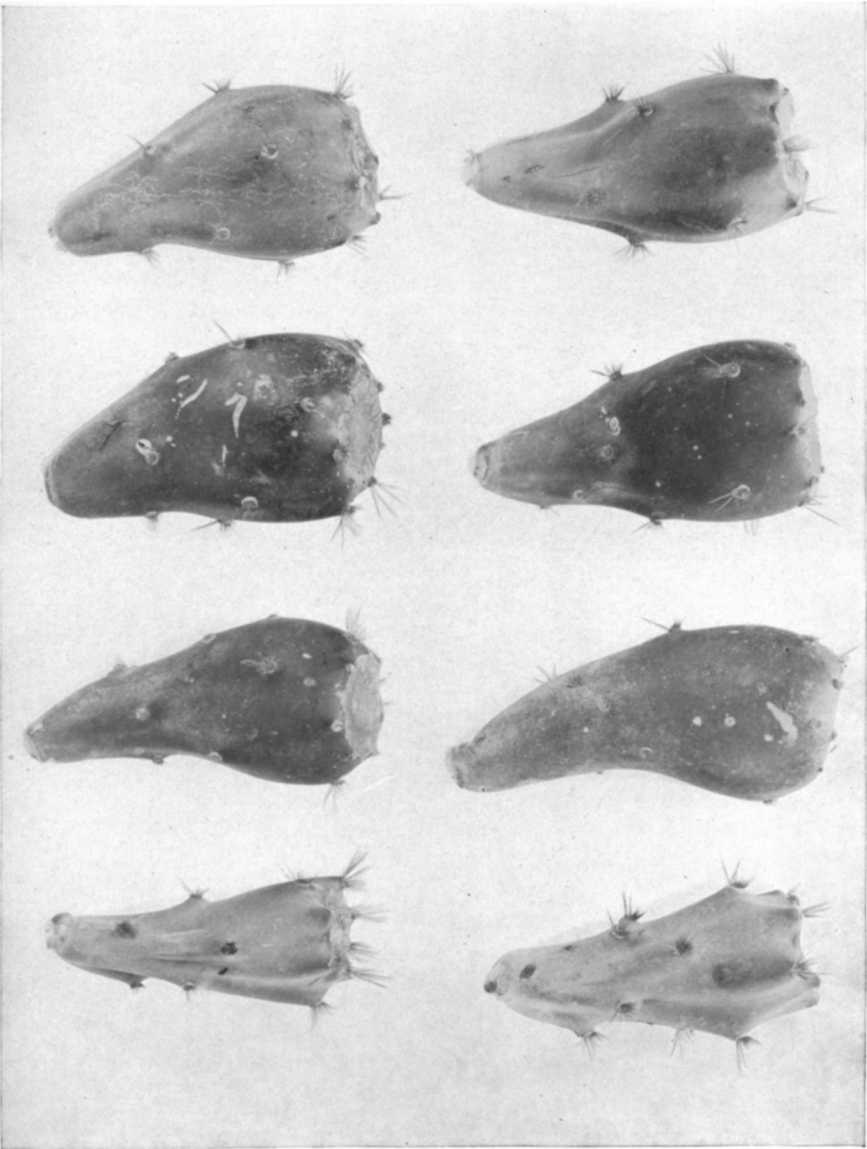
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OPUNTIA TARDOSPINA.



OPUNTIA GILVOALBA.



OPUNTIA GILVOALBA.